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L1 14 S (PARALLEL OR PLURAL?) (4A) REACTOR AND MANIFOLD

=> d bib, ab 1-14

L1 ANSWER 7 OF 14 CA COPYRIGHT 2004 ACS on STN

AN 128:142450 CA

TI Solid-phase organic synthesis system with pressure-regulated manifold

IN Hamper, Bruce C.

PA Monsanto Company, USA

SO PCT Int. Appl., 35 pp.

PI WO 9806490 A1 19980219 WO 1997-US14179 19970811

US 5792430 A 19980811 US 1997-900120 19970725

PRAI US 1996-695720 A 19960812

AB A solid-phase org. synthesis reactor is described for parallel and split synthesis for combinatorial libraries, comprising a manifold and an optional heating block mounted to an upper surface of the manifold. The manifold includes an internal cavity and a first array of holes coupled to the internal cavity. The heating block includes a second array of holes vertically aligned with the corresponding holes of the first array. The first and second arrays of holes are adapted to accommodate flow-through reaction vessels. Each reaction vessel is secured in one of the holes of the first array and a vertical-aligned one of the holes of the second array. The interiors of the reaction vessels are in communication with the internal cavity of the manifold. The flow-through reaction vessels, which contain solid phase resins for solid phase org. synthesis, are controlled by regulating the pressure within the manifold. The manifold includes a pressure port coupled to both an inert gas source and a pressure control device, and a vacuum port coupled to a vacuum control device and a vacuum source. The pressure control device and the vacuum control device are easily operated to create a vacuum and varying degrees of pos. pressure within the manifold as required when carrying out an org. synthesis. A second manifold is mounted on the first manifold in the absence of the reaction vessels for supplying inert gas used to conc. org. synthesis products.

L1 ANSWER 8 OF 14 CA COPYRIGHT 2004 ACS on STN

AN 127:359054 CA

TI High throughput oligonucleotide synthesizer

IN Neves, Richard S.

PA USA

SO U.S., 9 pp.

PI US 5681534 A 19971028 US 1995-504959 19950720

PRAI US 1995-504959 19950720

AB The present invention relates to a high-throughput oligonucleotide synthesizer for synthesizing multiple oligonucleotides comprising a pre-existing low throughput oligonucleotide synthesizer which has been integrated with an increased throughput expansion module in order to increase the throughput capacity of the low throughput synthesizer. More specifically, the present invention comprises (a) a pre-existing low-throughput oligonucleotide synthesizer having at least one and no more than eight reactor positions, (b) a plurality of valve manifolds each having a single inlet port and a plurality of outlet ports, (c) a plurality of fluidic connection means each having a first end in fluid connection with one of said reactor positions of the pre-existing low-throughput oligonucleotide synthesizer and a second end in fluidic connection with the inlet port of one of the plurality of valve manifolds and (d) a plurality of reactor positions corresponding in no. to the no. of valve manifold outlet ports, each of the plurality of reactor positions (d) having a single reactor inlet such that each of said reactor inlets is in fluid connection with a corresponding valve manifold outlet port. Each of the plurality

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of **reactor** positions (d) is configured to accept a pre-packaged reactor column, such as a pre-packaged reactor column comprising a substrate having a first 3' base covalently attached thereto. Multiple oligonucleotides are synthesized by the high-throughput oligonucleotide synthesizer of the present invention by the delivery of a stream of reagents from the pre-existing low throughput synthesizer to the **plurality** of **reactor** positions (d). In this manner, the high-throughput oligonucleotide synthesizer increases the throughput capacity of a conventional oligonucleotide low throughput synthesizer having the std. 2 or 4 reactor positions to an automated operation of up to 64 reactor positions, and typically from 12 to 24 reactor positions.

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